



DAVID D. HALE

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Global Chief Economist

David D. Hale is the Global Chief Economist for the Zurich Financial Services Group and its investment affiliates. In this position, he advises the group's domestic and global fund management operations on the economic outlook and a wide range of public policy issues. He joined the group following its acquisition of Kemper Corporation, where he had served as Chief Economist for many years. Mr. Hale also serves as Chairman of the Board of China Online, L.L.C., a service provider for business and economic news about China.

Mr. Hale, who initially joined the Kemper Group in 1977, holds a B.Sc. degree in international economic affairs from the Georgetown University School of Foreign Service and a M.Sc. degree in economics from the London School of Economics.

Mr. Hale is a member of the National Association of Business Economists and the New York Society of Security Analysts. He writes on a broad range of economic subjects and his articles have appeared in the *Wall Street Journal*, *The Far East Economic Review*, *The Financial Times of London*, *The New York Times*, *The Nihon Kezai Shimbun*, *The Financial Analyst Journal*, *The Harvard Business Review*, *Foreign Policy* and other publications. In 1978, he was appointed a member of the Financial Accounting Standards Board Task Force on the Conceptual Framework (for accounting standards) because of articles he wrote on inflation accounting. He has frequently testified before Congressional committees on domestic and international economic policy issues and done briefings for senior officials in the executive branch, including President Bush. Since 1990, he also has been a consultant to the U.S. Department of Defense on how changes in the global economy are affecting U.S. security relationships.

In September, 1990, the New York chapter of the National Association of Business Economists conferred upon Mr. Hale the William F. Butler Award. This award is conferred annually by the society upon a business economist who has made an outstanding contribution to the field. Other recipients have included Paul Volcker, Geoffrey Moore, Lawrence Klein, Alan Greenspan, and Otto Eckstein.

In addition to his responsibilities at Zurich Financial Services, Mr. Hale is a member of the Academic Advisory Board of the Federal Reserve Bank of Chicago and the Hong Kong Monetary Authority as well as a variety of government and private sector economic policy research groups in Washington, Tokyo, and Bonn. Mr. Hale also maintains close ties to his native state of Vermont and has served on advisory boards in its state government, including the Governor's Commission on Property Tax Reform (1988-89) and the Governor's Council of Economic Advisors (1991-92).

**CAN AMERICA ACHIEVE A SOFT LANDING
AFTER IT'S STOCK MARKET BOOM**

OR

**WHY THE EQUITY MARKET BOOM IS AN EXPERIMENT
IN CORPORATE RESOURCE REALLOCATION**

**DAVID D. HALE
ZURICH FINANCIAL SERVICES, INC.**

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It is now widely perceived that the major risk looming over the world economy in the year 2000 is ~~the~~ possibility of a large stock market correction in the United States. This concern is based on the fact that the U.S. equity market has experienced large gains during recent years and now plays a more important role in the economy than ever before. The ratio of stock market capitalization to GDP has shot up to 150% from a sixty year moving average of 49%. It is estimated that almost 45% of the American people now own equities either directly or through defined contribution pension plans compared to less than 5% in the 1950's. The mutual fund industry now has about \$6 trillion of assets compared to \$5.6 trillion for the banking system. In the early 1980's, by contrast, mutual fund assets were equal to 10% of bank deposits.

The most visible impact of the stock market boom has been wealth creation in the household sector. The U.S. has enjoyed several quarters of remarkably robust consumer spending because of the impact of rising equity prices on both household wealth and consumer confidence. The savings rate has fallen to the lowest level since the early 1930's as consumers expanded outlays more quickly than the growth of wages and other forms of income. The decline in the private savings rate has also caused the current account deficit to expand to nearly 4.0% of GDP compared to a previous peak of 3.5% in 1987. The combination of rising equity prices, buoyant consumer spending, and a large current account deficit has provoked widespread concern that the U.S. is experiencing a bubble **economy** comparable to Japan during the 1980's or the U.S. itself in 1929.

While such concerns are understandable, the reality is that the U.S. stock market boom has been part of a much larger process of global resource allocation resulting from the end of the cold war, the increasing role of information technology in the economy, and the leadership ability of the U.S. corporate sector in utilizing this technology. There has not been a broad based asset inflation in the U.S. equity market during the past few years. The majority of companies in the S&P 500 have experienced share price declines or only small gains since 1998. Nor has there been a visible expansion of margin debt or bank lending to finance stock market speculation. In 1929, margin debt was equal to 18% of America's stock market capitalization and 15% of GDP compared to less than 1.5% today. In the late 1980's, Japan's asset inflation was financed by an expansion of bank lending from 70% of GDP to 120%. The expansion of U.S. bank lending during the past three years has been to finance corporate merger activity, not stock market speculation. The stock market boom of the past two years has resulted overwhelmingly from the growth of the market capitalization of the technology sector. It has mushroomed to \$4.5 trillion from \$500 billion during the early 1990's. The wealth creation resulting from the technology boom has, in turn, redefined the parameters of the U.S. business cycle by producing a significant expansion of business creation and investment in sectors with falling output prices. The current expansion is now the longest peacetime business cycle in American history and it is unlikely to end at any time in the foreseeable future because the technology boom has helped it to develop several self-reinforcing growth characteristics which are apparent in both the financial markets and the real economy.

The stock market boom has had a dramatic impact on the ability of small companies in the technology sector to obtain capital and pursue aggressive growth strategies. In 1999, new IPO's in the U.S. equity market raised \$69.2 billion compared to a previous peak of \$49.9 billion in 1996 and a grand total of \$350.8 billion since 1989. The ability of small companies to go public has also encouraged a dramatic expansion of America's venture capital industry. It raised funds at a \$25 billion annual rate during the first half of 1999 compared to \$14.2 billion during all of 1998 and only \$6.2 billion in 1995. About 66% of the funds were placed in the information **technology** sector while 73% of the IT component was placed with Internet companies. The technology share of America's stock market capitalization has expanded from 10% in the early 1990's to about 33% today. The I.T. hardware sector now represents about 14% of U.S. market capitalization compared to 6% in 1989. The software component of the market has expanded from less than 2.0% in 1989 to about 9% today. The Internet sector has a market value of about \$550 billion or a sum equal to about 4% of the market's capitalization. Microsoft, alone, now has a market capitalization of \$600 billion compared to only \$350 billion for the entire global metals industry. It is the first U.S. company to develop a market cap larger than the GDP of Canada and thus to qualify for membership of the G-7.

The information technology sector represents only 5.1% of stock market capitalization in Germany, 9.4% in France, 4.9% in Britain and 15.0% in Japan. The countries which have information technology sectors

that compare to the stock market capitalization of the U.S. are Canada (29%), Taiwan (21.9%), Sweden (38.2%) and Finland (over 50%). The telecommunications sector accounts for another 8.9% of stock market capitalization in the U.S. compared to 16.5% for continental Europe, 16.1% for Japan, 18% for the United Kingdom and 15.1% for Asia less Japan.

As a result of the dramatic changes in the composition of the U.S. stock market and the upsurge of IPO activity during recent years, the U.S. economy has been able to reallocate resources on a large scale from traditional industries to new high growth sectors linked to information technology and the Internet. The impact of the technology boom in the stock market is becoming increasingly apparent in the real economy. The level of R&D spending in the U.S. economy has rebounded to 2.7% of GDP after declining to 2.4% during the mid-1990's. The number of patents issued during 1989 was about 140,000 or 29% higher than during 1997 and 55% higher than during 1990. The share of Ph.D.'s issued for studies in technical fields has climbed to 48% from a trough of 36% during the late 1970's. Higher business investment has represented about one third of the economy's growth since 1990 compared to only about one sixth for all the output growth since 1950. The information technology share of output has increased to 5.8% from 3.3% in 1992. The Computer sector has expanded from 1.8 % of output to 2.9% while the software share has grown to 2.2% from 1.2%. The standard deviation of the economy's growth rate has also been only about 1.7% during the 1990's compared to 3.7% for the period after 1950. The growth rate of productivity has accelerated to a level where most Federal Reserve Governors now perceive that economy's optimal non-inflationary growth rate is 3.0-3.5% compared to only 2.0—2.5% a few years ago. As a result, they have been far more cautious about raising interest rates during the past year than they were when the economy previously experienced a surprise growth upsurge during 1994.

The US. Congress has tried to support the technology boom by reducing immigration restrictions on technical workers. In 1999, the Congress expanded the number of H 1B guest worker visas to 115,000 from 60,000. The technology industry played a decisive role in lobbying for the change because of the shortage of qualified people in the U.S. and the large role already played by immigrants in technology centers such as Seattle and Silicon Valley. Microsoft reports that one quarter of its staff in Washington is already foreign. According to a study by the Public Policy Institute of California, Chinese and Indian immigrants now play a very prominent role in that state's high technology industry. They are the CEO's of 2.775 firms representing about 24% of the total number of high technology firms in Silicon Valley. In 1995-1998, they were responsible for 29% of the new start-up firms in the valley compared to 12% in the early 1980's. In 1990, Asian immigrants accounted for 21% of all scientists and engineers in Silicon Valley while other immigrants account for an additional 11%. Silicon Valley now employs about 4,500 Indian Ph.D.s and 9,000 Chinese Ph.D.'s compared to 35,000 American Ph.D.'s. America's willingness to import human capital, not just financial capital, has given it a major advantage over countries which restrict immigration, such as Germany and Japan.

Many pundits regard the U.S. equity market boom as a bubble because of the high valuation being placed on the technology sector. The median price/earnings multiples of large and medium technology companies is now about 50 while small cap companies are at 36. While there is little doubt that many Internet companies enjoy demanding price/earnings valuation premiums, the fact remains that the stock market boom is producing changes in the U.S. economy's resource allocation process which is having a self-reinforcing impact on its growth and inflation performance. As with any capitalist investment process, there is a risk that investors may commit too much money to a favored sector and thus depress profitability, but there are so many different qualitative dimensions to the current technology boom that it is unlikely to produce a boom-bust cycle comparable to those which have occurred in traditional commodity producing industries. Companies in the Internet consumer sector may self-destruct because of excessive competition, but there are thousands of potential business to business niches in the Internet sector where competition will be much less of a challenge. The fact that American Online is acquiring Time Warner also illustrates very clearly how technology is changing the balance of power in the media sector. AOL is a new company while Time Warner has been an important publishing company since the 1920's.

The rise of the stock market as an engine of economic transformation began as an American phenomena, but is rapidly spreading to other countries. During the past year, there has been a significant expansion of equity funding for small technology companies in Scandinavia, Australia and Hong Kong. The ratio of stock market capitalization to GDP in Finland, for example, is now at 250% because of the dramatic

expansion in the market value of Nokia. The Finnish telecom company now has the largest market capitalization of any company in Europe and its success is encouraging many new Finnish technology companies to pursue listings either in Helsinki or on NASDAQ.

The other industrial countries are lagging far behind the U.S. in using the equity market to reallocate resources. In Japan, Germany and France, the ratio of stock market capitalization to bank assets is still very modest compared to the U.S. or Scandinavia (see table). German bank assets are almost five times as large as the country's stock market capitalization whereas the U.S. banking system now has assets equal to about one third of stock market capitalization. But the situation in Germany is not totally static. A new market for small companies was created two years ago and has now almost 180 companies with a market capitalization of \$90 billion. The emergence of Frankfurt's "Neuer Markt" is the most exciting development in Germany's financial history since World War Two and suggests the country may be capable of developing an equity culture comparable to the one which has long existed in the English speaking countries. Such a development could also help Germany to accelerate the resource shift which has to occur from traditional smokestack industries to small and medium sized technology companies. But it will take Europe some time to close the gap with the U.S. in using the stock market as a vehicle to encourage economic change and fund new high growth sectors. In 1998, the European venture capital industry raised a total of only \$6.2 billion and just \$3.1 billion for information technology companies.

Japan also has a relatively weak position in the venture capital sector. According to a Nikkei survey, Japan has about 97 venture capital firms with 806 billion yen of assets (\$6.7 billion) compared to the nearly \$100 billion in America's 547 venture capital firms. In contrast to the U.S., most of the VC firms are affiliates of large banks and insurance companies, not independent organizations. As a result of these links, they are heavily influenced by the financial health of their parent groups and less likely to behave in a counter cyclical fashion when the groups have financial problems. This conservatism is apparent in their investment strategy. They have invested only 10% of their assets in the technology sector compared to 78% for U.S. VC funds. The one exception to this pattern in Softbank, a firm which has evolved from a software distributor into a major Internet investment fund enjoying a market capitalization of nearly \$80 billion. But Softbank has enjoyed its greatest successes by being an early investor in the U.S. Internet industry and is only now starting to shift its focus back to Japan.

In fact, the Japanese government is so concerned about the weakness of the country's venture capital sector that it recently announced plans to provide \$67 million of funding to launch several new VC funds targeted on start-up companies. The government's initiative may be useful to a few companies, but it cannot compensate for the weakness of the private sector in the VC sector. What Japan will need is a cultural revolution which encourages more risk-taking and more decentralization. The upheavals now occurring in the structure of the financial system, the upsurge of corporate restructuring activity and the success of Softbank suggests that the preconditions are falling into place for a stronger VC industry to emerge but it will probably take Japan at least two or three years to have adequate funding for small companies to improve the economy's growth performance.

The American experience suggests that a country without a vibrant and active stock market is now at a significant disadvantage to others in having the financial infrastructure necessary to promote both structural change and technological leadership. In fact, a low ratio of stock market capitalization to bank assets should now be regarded as an impediment to economic growth. Total global stock market capitalization has expanded to \$34.6 trillion or more than IMF estimates of global GDP (\$30.1 trillion), but 47% of it is in the U.S., alone, compared to only about 20% in continental Europe and 8% in the emerging market countries.

The U.S. has also recently modified its banking laws in order to permit the banks to play a more active role in the information technology revolution. Under the old Glass Steagall law enacted during the 1930's, there was a sharp division between investment banking and commercial banking. It is difficult for commercial banks to play a role in the IT. revolution without getting into the investment banking business because of the risks in funding start up companies. If an equity manager invests in ten interesting technology companies, the odds are high that he will earn a return high enough return on at least two or three of them to compensate for losses on the ones which fail. A banker, by contrast, cannot earn an incremental return from a loan to a successful technology company large enough to compensate for losses

on loans to those which fail. The I.T. revolution requires equity funding and under the old banking rules, many financial institutions were precluded from playing a role in providing equity financing. ..

In the modern period, the countries which have developed large stock market capitalizations have typically been those which promoted retirement savings through tax deferred pension plans. The U.S., Britain and other English speaking countries have much higher ratios of stock market capitalization to GDP than most of continental Europe because the growth of pension plans encouraged securitization of debt and equity rather than heavy reliance of bank lending and cross shareholdings with banks and insurance companies. The U.S. also has promoted public ownership of equities during the 1990's by offering significant tax allowances for capital gains compared to other forms of income.

During the 1990's, many developing countries have tried to promote the development of local capital markets and privatization of state owned companies by offering new tax allowances for retirement savings. Singapore and Chile began the process while countries as diverse as Poland, Mexico and Thailand are now imitating their example. But as the recent experience of the American economy will testify, countries should promote stock market development not merely to create a storehouse for the accumulation of retirement savings. They should also encourage expansion of the stock market in order to improve their system of resource allocation and enhance the growth of new sectors. The U.S. stock market boom has not merely been a by-product of a good economy and the expansion of retirement savings. It has played an integral role in encouraging resource allocation decisions which have made the current business cycle the longest peacetime expansion in American history. The future outlook for the U.S. economy will depend upon whether this experiment in resource reallocation continues to bolster productivity and profitability but there can be little doubt about its success so far. In the absence of the IT revolution and its impact on the equity market, the U.S. growth rate would have been as anemic as Europe's and left the world economy without the growth leadership to recover from the financial crises which engulfed the emerging market economies during the late 1990's.

Distribution of Assets by Major Classes 1999			
<i>Billions of U.S. Dollars</i>			
	Stocks	Bank Assets	Bonds Total
USA	15,300 (43%)	5,600 (16%)	14,607.0 (41%)
Canada	700 (40%)	568 (32%)	505 (28%)
Hong Kong	530 (37%)	871 (61%)	30.5 (2%)
Singapore	260 (60%)	170 (39%)	2 (1.0%)
Japan	3,300 (25%)	4857.2 (36%)	5,228.1 (39%)
Germany	1,200 (14%)	5,547.2 (65%)	1,842.0 (21%)
France	1,200 (20%)	3,564.6 (61%)	1,110.5 (19%)
Italy	570 (17%)	1,255.8 (39%)	1,435.5 (44%)
U.K.	2,600 (36%)	3,820.5 (52%)	849.5 (12%)
Finland	300 (68%)	60.0 (14%)	76.8 (18%)
Sweden	450 (46%)	285.0 (30%)	236.7 (24%)
Mexico	120 (58%)	39.0 (19%)	46.9 (23.0)
Australia	580 (49%)	290.0 (24%)	323.7 (27%)

Risks in the U.S. Outlook

The U.S. equity market boom is the by-product of large scale resource reallocation process which will be reshaping the U.S. and world economy for many years to come. But all structural trends are subject to cyclical risks, so it is not difficult to imagine scenarios in which the process of change could pause temporarily because of shocks in the financial markets or changes in public policy.

The U.S. would appear to be confronting three major vulnerabilities during the next few years. The first is that productivity growth could deteriorate and revive concerns about domestic inflation. The second risk is that the global economy could produce a resurgence of inflation which would set the stage for monetary

tightening, slower output growth and a squeeze on company profits which would depress both the stock market and investment. The third risk is the large size of the U.S. current account deficit. It also could set the stage for financial market turmoil if money flows to the U.S. slow down either because of greater capital demands developing in other countries or a change in the U.S. economic environment which lessened investor confidence in the prospects for U.S. asset returns.

The risk of a productivity slowdown is serious because Federal Reserve policy during the past twelve months has been based on the assumption that the economy now enjoys a sustainable long-term productivity growth rate of 2.0-2.5% compared to 1.0-1.5% previously. During the past two years, productivity growth has even been running as high as 3.5-4.0% and thus fully offset the growth of wage compensation. If productivity growth were to decelerate sharply, firms would experience higher unit labor costs and be under greater pressure to raise prices. The Federal Reserve would attempt to contain such inflation pressures by raising interest rates and producing a **squeeze** on corporate profit margins. Such a profit decline would probably set the stage for a stock market correction.

There is also great concern among analysts about the apparent narrowness of the recent productivity upturn. It has been alleged by many pundits that practically all of the productivity upsurge has **been** concentrated in the computer sector and that productivity elsewhere has been languishing. What remains unclear, though, is whether the apparent weakness of productivity in the service sector and some sectors of manufacturing has resulted from measurement problems or real weakness. As an Economic Letter from the San Francisco Fed examining the debate about "A New Paradigm Economy" explained,

*"A careful look at the relevant statistics does provide some evidence of measurement problems. For instance, **Slifman** and **Corrado** (1996) examine **productivity** growth in the corporate sector (which includes companies like General Motors and IBM, as well as smaller corporations) and the noncorporate sector (which includes sole proprietorships and partnerships such as legal and medical practices, as well as nonprofit institutions such as hospitals) over the last three decades. They **find** that while there is little discernible change in the **average** growth rate of **productivity** in the **nonfarm** corporate sector since 1960, output per hour in the noncorporate sector grew at a 4 $\frac{3}{4}$ % **rate** from 1960 to 1973. **but fell** at a nearly 2% rate over 1973-1980, and **has fallen** by an average of $\frac{1}{2}$ % per year since then. And if it is hard to believe that productivity could actually be falling in broad sectors of the **economy** for decades, the data provide a **further puzzle**: profits in the noncorporate sector – which appears to be the least efficient in the economy – continue to be robust. This combination of developments suggests that we may be understating output in this sector. To take one example of how measurement error could creep in, income data **for part** of the noncorporate sector are derived from income tax returns. and it is generally believed **that** the income shown on these returns is **significantly understated**."*

*"A **different** breakdown of the data also provides evidence consistent with this hypothesis. **Specifically**, the data show that **productivity** in the service industries has fallen by more than **half a** percentage point per year since 1977, while growing at about 1% per year when averaged over all **nonfarm** private industries. Within the services sector the worst performers have been health services and legal services. This pattern of measured productivity growth is consistent with the measurement error **story**, since productivity **appears** to be growing more **slowly** in sectors where output is harder to measure."*

*"Yet such **difficulties** in measuring output have probably always been with us. Is there **any** reason to believe that they have gotten worse **recently**? Griliches (1994) says the answer is yes, based on the fact that the 'unmeasurable' sectors (that is sectors where output is **difficult** to measure) account for an increasing share of output. In the unmeasurable sectors he includes construction, trade, finance other services and government while agriculture, mining, manufacturing transportation, communication and public utilities are included in the measurable sector. He points out that the early postwar period nearly half the economy was in the measurable sector: by 1990, this number had fallen to less than a third. As a consequence, 'Measurement problems have indeed become worse. [In addition,] . . . major portions of actual technical change have eluded our **measurement framework** entirely."*

*"Although the time span over which this shift has **taken** place may seem too long to be relevant for our purposes, Griliches points out that over three quarters of the recent spending on computing equipment has taken place in the 'unmeasurable' sectors; since output in these sectors is hard to measure anyway, it is not*

surprising that **we find** no evidence of higher productivity. This view has not gone unchallenged. Sichel (1997a) has argued that even under relatively favorable assumptions, the **sectoral** shifts in the **economy** are not large enough to explain most of the productivity slowdown since the 1970s."

The problem for policy makers is not just one of measuring productivity. It is also estimating the time lags between the introduction of new technology and their impact on the production process. Since the industrial revolution began in the late 18th century, there have been significant lags between technical breakthroughs and their impact on productivity. In the late 18th century, the growth rate of productivity actually declined from 0.4% per annum to 0.2% per annum because of teething problems in the introduction of new technology. In the late 19th century, the introduction of electricity also failed to have much of an impact on productivity until several years after it became commonly used in businesses. As Jeremy Greenwood explained in a recent article for the Cleveland Federal Reserve Bank economic publication,

"The adoption of new technologies involves a **significant** cost in terms of learning; skill **facilitates** this learning process. That is, skill is important for adapting to change. There is considerable evidence of learning effects. For example, using a 1973-86 data set consisting of **2,000 firms** from 41 industries. Bahk and Gort (1993) **find** that a plant's productivity increases 15 percent over its first 14 years because of learning effects..."

"How **large are** the costs of technological adoption? Calculations suggest that the costs of adopting new technologies exceed invention costs **by** a factor of 20 to **1** and that adoption costs may amount to 10 percent of GDP [growth]. Surely the costs of technological adoption must be large. How else to explain the long **diffusion** lags for new technologies as well as the continual investment in older technologies at the **household** firm and national levels? And surely, a large part of these adoption costs must be in acquiring or developing the skills needed to implement the new technologies. "

Fed chairman Alan Greenspan has often referred to the problems with measuring productivity in both his public speeches and congressional testimony. In October, for example, he noted the role of productivity in the current expansion and the difficulties of measuring it precisely.

"Although cost pressures appear generally contained, risk to sustainable growth persist. Despite tentative evidence of a slowing in certain interest-sensitive sectors of the economy and of accelerating **productivity**, the expansion of **activity** continues in excess of the **economy's** growth potential. "

"As a consequence, the pool of available workers willing to take jobs has been drawn **down further** in recent months, a trend that must eventually be contained **if** inflationary imbalances are to remain in check and economic expansion continue. "

"The degree to which the growth rate of productivity has been rising – indeed, whether in a long-term sense is rising at all – is subject to considerable debate among economists. This results, in part, from major disputes about our national data system. "

"Gross product per workhour measured for the **nonfarm** business sector, employing the newly revised data made available this morning, rose an average 2% percent per year over the past five years, and nearly 2 $\frac{3}{4}$ percent over the past two, **after** averaging 1 $\frac{3}{4}$ percent over the previous two decades. Because in the past we have had episodes of similar improvements in productivity performance **that failed** to persist, these data, on their own, cannot be relied upon to draw broad conclusions about whether an acceleration in trend **productivity** is under way. "

"But other data are more compelling. Growth in gross domestic income **has** outstripped the growth of the conceptually equivalent gross domestic product in recent years, producing a dramatic widening of the statistical **discrepancy**. **Productivity** growth in the **nonfarm** business sector, estimated as real gross income per hour rather than real gross product per hour, over the past two years is, thus, a more noticeable 3 $\frac{3}{4}$ percent at an annual rate, **1 percentage point** faster than measured from the product side. "

"Finally, because the measured level of productivity in the noncorporate business sector exhibits noncredible weakness for substantial spans of time, I believe data for the nonfinancial corporate sector afford a more accurate, though admittedly more narrow, measure of productivity performance. And here the numbers are still more impressive, nearly 3 percent on average over the past five years, and more than 4 percent over the past two. By this measure, productivity growth in the 1970s and 1980s also averaged about 1 $\frac{3}{4}$ percent per year. Moreover, the acceleration in productivity appears reasonably widespread among nonfinancial corporate firms beyond the high-tech industries themselves, even though gains in output per hour in the advanced technology companies have verged on the awesome."

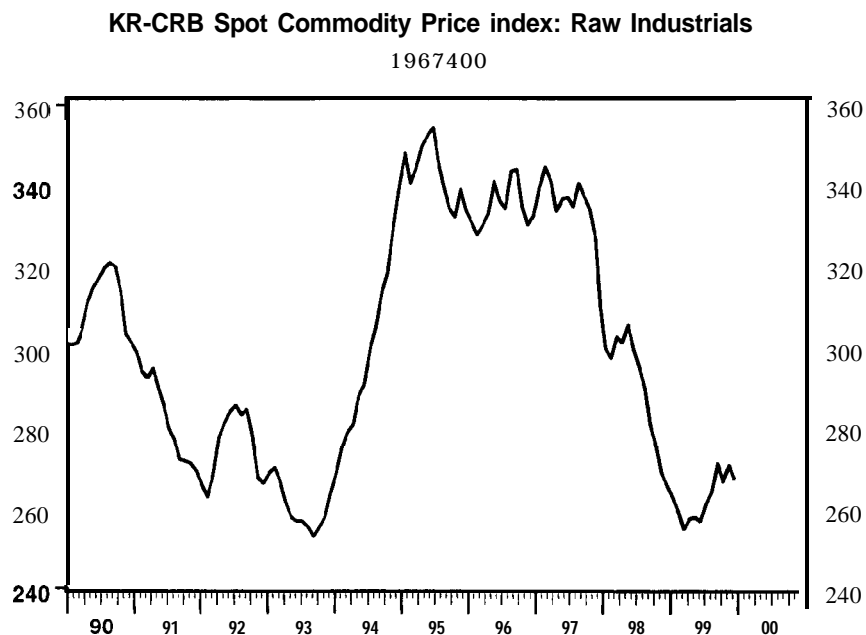
"With trend growth in productivity now clearly in play, the weakness of a simple demand-side evaluation of economic forces has been brought into sharp focus. It may no longer be the case that an acceleration in demand presages an overheated and unstable economy, if the demand growth is caused by growth in trend productivity. Higher productivity growth must eventually show up as increases in employee real incomes, in profit, or more generally both. Unless the propensity to spend out of real income falls, consumption and investment growth will rise, as indeed they must over time if demand is to keep pace with faster supply."

All that can be said with certainty at present is that America's information technology driven experiment in resource reallocation appears to have produced a higher growth rate of productivity than can be adequately measured by conventional economic data. But some Federal Reserve Governors will continue to be heavily influenced by official measures of output growth and productivity. As a result, any signs of a slowdown in the official measures of productivity growth would increase the risk of monetary restraint and ultimately a stock market correction.

The second great risk facing the U.S. economy is that the end of the Asian financial crisis and a recovery in the global economy will trigger a broad based resurgence of commodity prices which could encourage the Federal Reserve to raise interest rates. There is little doubt that the timing of the Asia crisis proved to be benign from the standpoint of the U.S. business cycle. It came at the time that the U.S. unemployment rate had dropped below 5.0% and there was increasing discussion among Fed Governors about the need for monetary tightening. In fact, the Fed had hiked interest rates by 25 basis points during March, 1997 or only three months before the Thai devaluation which set the stage for currency contagion throughout east Asia. In the absence of the Asia crisis, the Fed would probably have raised interest rates at least two or three more times during the second half of 1997. Instead, the Asia crisis had three benign effects on the U.S. business cycle. First, it put monetary policy on hold, depressed long-term bond yields and helped to set the stage for a very robust housing market during 1998 and 1999. Secondly, it produced a decline in global commodity prices which lowered the U.S. inflation rate during 1998 to only 1.5% despite the fact that the U.S. unemployment rate fell below 5.0%. Finally, it produced a pool of surplus liquidity in the global financial system which found a home in the equity markets of North America and western Europe. The influx of foreign capital helped to finance the U.S. current account deficit while driving the New York equity market to new highs. The appreciation of the equity market boosted household wealth and encouraged further gains in domestic consumption at a time when the weakness of the world economy was depressing exports.

The upturn which became apparent in the world economy during the second quarter of 1999 has already had an impact on U.S. monetary policy. It helped to persuade the Fed that the financial crisis which gripped the markets during 1998 had faded and thus played an important role in encouraging the three rounds of monetary tightening which occurred between June and November. The risk in the years 2000 and 2001 is that further steady expansion of the global economy will boost capacity utilization rates and further enhance the ability of both commodity producers and manufacturers to raise prices. In fact, there has already been a significant rally in the level of industrial commodity prices while U.S. import prices have been increasing for several months after two years of decline.

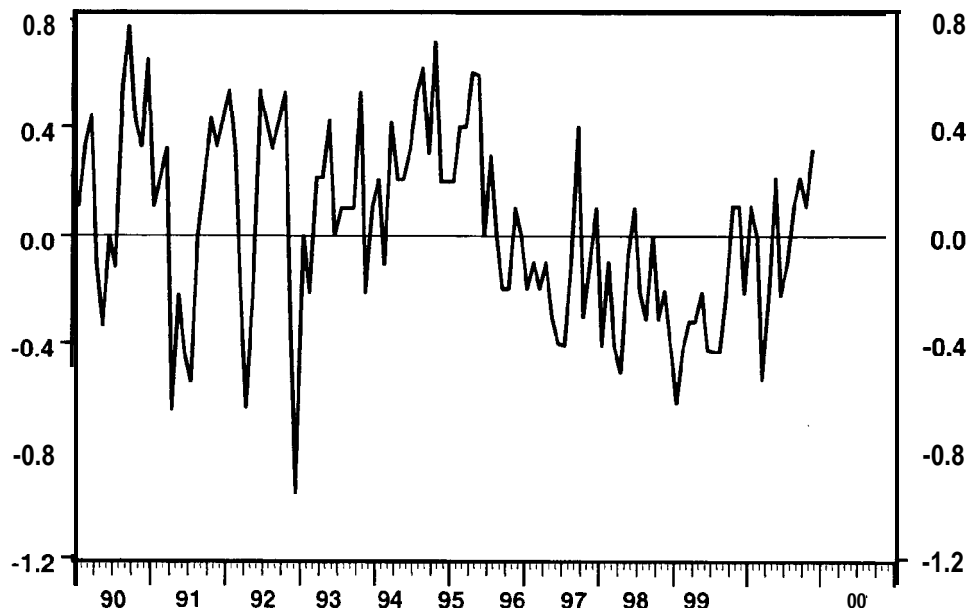
The prospect of the global economy enjoying a growth rate potentially as high as 4.0% at a time when the U.S. unemployment rate is only 4.1% suggests that monetary policy will remain cautious during the next



twelve months. Unless the growth rate of the U.S. economy slows to 3.0% or less on a sustained basis, the Fed will probably feel compelled to raise short-term interest rates to at least 6.0% and possibly even higher during 2000. Such an interest rate hike could challenge the high valuation levels of the New York stock exchange and set the stage for a market correction which would have negative spillover effects on both personal consumption and business **investment**. Such a correction would not have to produce a recession or hard landing but it could lower the U.S. growth rate to only 2.0-2.5% during 2001 compared to an average of 3.54.0% during the years since 1994.

Import Price Index: Nonpetroleum Imports (PMENP)

% Change - 12 Month Rate of Change



The third risk facing the U.S. economy in the New Year is the large size of the current account deficit. It is likely to rise into the \$350-400 billion range from \$320 billion in 1999, \$248 billion in 1998 and only \$144 billion in 1997. Such a deficit will be equal to 3.8-4.0% of GDP compared to a previous peak of 3.5% in 1987.

The U.S. has had few problems in funding its external deficit during recent years because of strong foreign demand for U.S. equities and corporate debt as well as a tremendous upsurge of FDI in the form of foreign takeover bids for U.S. companies. In the 1980's, the U.S. had relied on Japanese demand for Treasury securities to fund its external deficit. In the late 1990's, European investors and companies have played a far more important role funding the U.S. deficit. In the first half of 1999, Europe accounted for all foreign purchases of U.S. equities, 74% of foreign purchase of corporate bonds, and 57% of foreign purchases of agency securities. In 1998, the capital inflows to the U.S. consisted of \$193 billion of foreign direct investment and \$218 billion of foreign demand for corporate equity and debt compared to only \$46 billion of demand for Treasury securities. In 1989, by contrast, foreign demand for U.S. direct investment and non-Treasury securities had been only about \$107 billion.

As the U.S. has been running a current account deficit without interruption since the early 1980's, the country also now has a large stock of external debt. On the basis of the market value of assets, the U.S. deficit on foreign investment has expanded to nearly \$1.6 trillion from \$400 billion in 1990 and a surplus of almost \$400 billion at the start of the 1980's. As a result, the U.S. will soon run a deficit on investment income of nearly \$20 billion at annual rates.

The sheer size of the U.S. current account deficit and the growing deficit on investment income is a potential risk for the U.S. economy because any interruption of capital flows could set the stage for a large

dollar devaluation and rise in the level of interest rates which might then puncture the boom in the equity market. Many pundits have been warning since 1997 that such a risk was imminent but so far the markets have proved them wrong.

In the years 2000 and 2001, the U.S. would appear to be facing three distinct challenges to sustaining capital inflows at a level high enough to maintain the dollar and interest rates at current levels.

The first is that a global economic recovery could create more alternatives to the U.S. economy as places to invest capital. The Japanese yen, for example, experienced a sharp recovery after March, 1999 because of an upsurge of foreign demand for Japanese equities in the belief that Japan was poised for both a cyclical recovery and an upsurge of corporate restructuring to bolster profitability. Many other Asian currencies also have rallied during the past year because of a recovery in foreign demand for their equity and debt. The Euro, by contrast, has declined because of a tremendous outflow of corporate capital in pursuit of merger and acquisition opportunities in the United States. In 1999, Europe had a net FDI outflow of \$120 billion compared to a current account surplus of \$50 billion. Many U.S. mutual fund managers also entered 1999 with such a massive overweighting in European equities that they felt compelled to reduce them when evidence appeared of recovery in Asia and other regions. Japanese investors were also heavily overweighted in European bonds when the new currency appeared.

In the years 2000 and 2001, it is quite possible that the economic recoveries outside of North America could generate improvements in asset returns significant enough to alter global portfolio allocations away from the U.S. equity market. If the reweightings of portfolios went far enough, they could depress the dollar, push up bond yields and further magnify the pressure on the Fed to hike interest rates. In such a scenario, the U.S. equity market could decline and generate a self-enforcing correction in the dollar and bond prices. The weakness of the equity market might then help to reduce the current account deficit by depressing consumption but there would be lag between the adjustment in the asset markets and the current account improvement of at least two or three quarters.

It is also possible to imagine a dollar correction occurring solely because of negative news in the U.S. itself. If wage growth finally takes off and threatens to push inflation higher, the Federal Reserve would raise interest rates in order to contain inflation by squeezing corporate profit margins. The weakness of profits might then depress the equity market and set the stage for consumption slowdown a few months later.

In addition to these traditional economic risks, the U.S. dollar could be vulnerable to the coming presidential transition. The next presidential transition will be the first to occur against the background of a large current account deficit and external debt stock. When Mr. Reagan took over the White House in 1981, the U.S. did not have a current account deficit. When Mr. Bush took over in 1989, the U.S. had experienced two years of strong export led growth and was reducing the current account deficit from its peak levels of 1987. When Mr. Clinton arrived in Washington in 1993, the external deficit was less than 1.0% of GDP. When the next president takes office, the U.S. will have an external deficit of close to 4.0% of GDP and a net foreign debt stock approaching 20% of GDP.

The presidential transition is a potential high risk period because of the nature of the U.S. political system. When the presidency changes, the new chief executive appoints three thousand other officials, including all the senior ranks of the Treasury, the Commerce Department, the USTR and other agencies responsible for

Foreign Demand For U.S. Financial Assets

Net Purchases of U.S. Treasury Notes and Bonds – Broad Regions							
	All Foreign Countries	Total Asia	Total Europe	Total Latin America	Asia Less Japan	Europe Less the U.K.	All Foreign less the U.K. & Tax Havens
12 Month Rolling Sum of Net Purchases of U.S. Treasury Notes and Bonds (billions of \$)							
10/31/99	25.02	44.25	-27.79	-4.77	16.97	-11.48	54.43
9/30/99	32.56	51.06	-37.25	4.65	22.90	-9.63	62.35
8/31/99	27.20	45.51	-30.76	0.41	22.48	-8.89	52.86
7/31/99	-7.67	34.88	-35.40	-14.19	14.45	-19.60	23.93
5 Yr High	272.89	108.87	160.63	56.37	55.00	56.43	161.78
(date)	6/30/97	6/30/97	1/31/98	7/31/96	4/30/97	10/31/97	8/31/97
5 Yr low	-7.67	-18.85	-37.25	-24.66	-8.21	-19.60	-10.24
(date)	7/31/99	8/31/98	9/30/99	2/28/95	8/31/98	7/31/99	9/30/98
Net Purchases of U.S. Government Agency Securities – Broad Regions							
10/31/99	97.21	35.58	35.22	25.56	24.16	14.67	55.24
9/30/99	81.51	32.30	38.30	9.62	21.41	13.54	51.12
8/31/99	71.41	25.47	38.71	6.16	18.56	11.93	41.34
7/31/99	69.51	27.40	39.54	1.39	20.46	13.23	44.76
5 Yr High	97.21	35.58	44.31	27.53	24.16	14.67	55.24
(date)	10/31/99	10/31/99	1/31/99	6/30/98	10/31/99	10/31/99	10/31/99
5 Yr low	20.04	2.22	10.43	-3.02	3.20	3.06	10.26
(date)	1/31/95	10/31/98	12/31/94	2/28/99	1/31/95	7/31/95	12/31/95
Net Purchases of U.S. Corporate Bonds – Broad Regions							
10/31/99	154.21	9.98	110.01	39.55	4.83	20.98	40.23
9/30/99	147.88	9.42	105.16	27.95	4.19	20.29	39.16
8/31/99	138.59	7.39	103.80	23.00	3.27	20.50	36.11
7/31/99	130.64	5.96	97.82	23.38	2.70	18.73	31.73
5 Yr High	154.21	11.62	110.01	29.55	4.83	21.46	40.23
(date)	10/31/99	2/28/97	10/31/99	10/31/99	10/31/99	2/28/99	10/31/99
5 Yr low	37.99	0.69	25.76	3.42	0.12	-0.53	7.67
(date)	12/31/94	10/31/98	11/30/94	7/31/95	10/31/98	11/30/94	6/30/95
Net purchases of U.S. Equities – Broad Regions							
10/31/99	91.91	0.11	81.02	8.97	-5.73	40.15	44.29
9/30/99	86.92	-0.60	73.00	14.19	-5.34	35.28	36.84
8/31/99	73.07	-2.56	67.95	7.11	-5.18	34.30	33.47
7/31/99	60.79	-8.48	61.62	6.87	-10.16	30.95	24.26
5 Yr High	91.91	4.99	85.39	14.19	5.36	57.98	57.26
(date)	10/31/99	4/30/96	7/31/98	9/30/99	4/30/96	7/31/98	5/31/98
5 Yr low	-8.44	-17.23	-4.12	-14.05	-17.28	-5.45	-7.04
(date)	3/31/95	4/30/99	5/31/95	9/30/98	4.30199	8/31/95	9/31/95

Source: Bianco Research, L.L.C.

economic policy. In contrast to other industrial countries, there are no permanent civil servants of high rank to guide economic policy until the new political appointees have had time to learn their jobs. The risk is therefore high that some of the new officials could make comments about the dollar exchange rate or other elements of international economic policy which could frighten the markets. Whereas the Clinton administration since Robert **Rubin** became Treasury Secretary has consistently advocated a strong dollar policy because of concern about funding the external deficit, the new officials could decide to place a greater emphasis on promoting exports and reducing the trade deficit.

The fact that one of the leading presidential contenders is the Governor of Texas also increases the risk of that state playing a role in the conduct of international economic policy which could be negative for the dollar. In the 20th century, there have been five major devaluations of the U.S. dollar and three of them occurred when there were Treasury Secretaries from Texas. The first devaluation occurred in 1933, when Franklin Roosevelt devalued in order to regain the competitiveness which had been lost when Britain devalued in 1931. The Treasury Secretary of that period was a Michigan businessman who did not play a prominent role in formulating policy and who suffered from such serious health problems that he died during the autumn of 1933. The second major devaluation occurred in 1971, when Treasury Secretary James Connally (former governor of Texas) decided to end the **Bretton Woods** fixed exchange rate in order to bolster U.S. trade competitiveness. The third devaluation occurred during the Clinton administration, when Treasury Secretary Michael Blumenthal and undersecretary Fred **Bergsten** talked the dollar down in order to bolster U.S. exports and encourage other countries to pursue more expansionary economic policies. Mr. Blumenthal is more difficult to categorize than other Treasury secretaries because he was a German war refugee who spent his teenage years in Shanghai. The next dollar devaluation came when Treasury Secretary James Baker (a Houston attorney) organized a G-7 push to devalue the dollar because of concern about the large U.S. trade deficit and the danger of Congress enacting protectionist trade legislation. The final devaluation came when Treasury Secretary Lloyd **Bentsen** (a former Texas Senator) concluded a press conference early in his term with a few unguarded comments about the potential benefits of a dollar devaluation. When Bentsen resigned, the new Treasury Secretary, Robert **Rubin**, reversed this policy bias but during the interim the dollar fell to a record low against the yen.

The Texas bias towards devaluation reflects ancient dividing lines in America's political economy. Since the gold standard era of the late 19th century public officials from the west have had a general bias towards favoring a soft currency whereas officials from the east have tended to favor a strong currency. Texas and the western states depend far more heavily upon commodity production than the eastern states, so they have a political culture which tends to support soft currencies and higher inflation. There is no guarantee that a future Texas Treasury secretary would behave like his predecessors, but the fact remains that the markets will be highly suspicious of any senior Treasury officials who do not have a high level of financial sophistication because of the large size of the U.S. external deficit.

If the U.S. financial markets experience a major correction because of careless talk about devaluation by the new Treasury team, they will probably attempt to regain confidence by returning to the Rubin-Summers policy favoring a strong dollar. But once confidence is lost, it will not be easily regained and the markets would probably remain skeptical until the new team had spent several months demonstrating to them that they truly favored a strong dollar. Since Europe and Japan do not want to lose export competitiveness, they would probably intervene to support the dollar, but such intervention would not be fully effective if there was a profound distrust in the market of America's new policy makers.

The U.S. boom has been going on for so long that there is always a risk that complacency could develop about it. In fact, the Wall Street Journal conducts a survey on the first business day of every January of about 50 prominent forecasters to get their estimates for growth, inflation and interest rates during the year ahead. In every year since 1994, American forecasters have significantly underestimated U.S. output growth, offering an average forecast of only 2.3% output growth per annum compared to an actual outcome of 3.8% per annum. In January 2000, by contrast, forecasters concluded that output growth would probably hold at close to 3.0% during the second half of 2000 after dipping modestly during the first quarter in response to an inventory correction. The new optimism of American forecasters is troublesome because it could intensify the pressure on the Federal Reserve to take more chances on the side of restraint in order to cool America's burgeoning self-confidence.

Ironically, there is now a higher level of confidence among American investors and forecasters than previously because of their perception that the Federal Reserve Chairman Alan Greenspan will be able to fine tune a soft landing for both the stock market and the economy. Wall Street paid close attention to Greenspan's recent comments at Jackson Hole about how the Fed would ease it if equity prices fell sharply while the hedge funds purchased technology shares aggressively in October after Greenspan made a positive speech about productivity growth. The extraordinary confidence which investors now have in Greenspan could compel him to take more chances on the side of restraint in order to dampen their animal spirits.

It is difficult to believe that the U.S. will be able to achieve a soft landing after a stock market boom on the scale which has occurred during recent years, but the fact remains that the stock market boom has been the by-product of a gigantic experiment in corporate resource allocation, not just easy monetary policy and speculative borrowing. The Japanese asset inflation of the 1980's was financed by an expansion of bank lending from 70% of GDP to 120%. The U.S. stock market boom of the late 1920's was financed by an expansion of margin debt to a level equal to 18% of the market capitalization or 15% of GDP. Despite the bull market of recent years, American margin debt is not even 1% of market capitalization today while the growth of bank lending has been financing an upsurge of merger and acquisition activity, not stock market speculation. The other major buyer of equities has been the household sector redeploying retirement savings to mutual funds through the growth of defined contribution pension plans. The mutual fund industry now has \$6 trillion of assets compared to \$5.5 trillion in the banking system. Such money flows are long-term in nature and do not represent a speculative form of equity trading. It is true that there are now seven million people trading on line and several thousand day traders trying to make a living solely from stock market speculation, but the day traders do not control large sums of money or have access to large amounts of margin credit. There is an unquantifiable amount of leverage in the derivatives market which could become destabilizing in response to some shocks, but the crisis at Long-Term Capital has forced most financial institutions to improve supervision of both their credit lines and proprietary trading departments. The Long-Term Capital experience has therefore reduced systemic risk among banks, if not hedge funds themselves.

The most likely scenario for the U.S. economy during the next few years is that the recent boom will unwind gradually in response to a mixture of gradual monetary tightening and a stock market consolidation but growth will remain above 2.5% as a stronger world economy gives a boost to exports and helps to reduce the trade deficit. In such a scenario, there would be rotation in the U.S. economy's growth leadership from domestic consumption, especially autos and housing, to exports of capital goods and consumer goods. The information technology sector will continue to play a decisive growth leadership role but a correction in the equity market could dampen its growth rate modestly compared to the strong momentum apparent during recent years.

The major factors responsible for America's superior economic performance during the 1990's have been its flexibility at corporate restructuring and capacity for financing entrepreneurs in the high technology sector. It also should continue to outperform the other G-7 countries in the long-term because of its demographic characteristics and high tolerance for immigration. During the next ten years, the working age population of Japan will decline by 6%, in Europe it will stagnate and in the U.S. it will expand by at least 10%. Europe and Japan may be able to compensate for the low growth of their working age population by raising retirement ages or trying to reduce unemployment, but the fact remains that the U.S. and Canada will be the only major industrial countries with steadily expanding labor forces. This advantage should continue to make the U.S. a more attractive outlet for investment than countries which will be both short of labor and struggling to finance retirement payments to rapidly aging populations.

The bottom line is that the U.S. economy is now clearly vulnerable to a tightening of monetary policy and a stock market correction. But without a major inflation shock to drive the Fed into a highly restrictive monetary policy, the Federal Reserve should be able to fine tune a soft landing in 2000 and 2001. The possibility of even a modest slowdown will disappoint some of Wall Street's more extreme optimists but it will probably be regarded by most analysts as the pause that refreshes. If the U.S. slowdown coincides with a more broadly based global upturn it could also help to reduce the systemic risks which could develop in the balance of payments if the external debt continues to expand at a rate equal to 3.0-4.0% of GDP per annum. It is possible to offer scenarios with more dramatic outcomes, especially if the

presidential transition is badly managed, but monetary policy tightening and stock market consolidations will not jeopardize the core strengths of the U.S. economy at the dawn of the new millennium. Those core strengths continue to be a great flexibility in corporate restructuring, a high tolerance for immigration and an appetite for risk taking which has given the U.S. an unprecedented capacity for financing entrepreneurial companies with leadership potential in developing new technology. In fact, if the stock market correction of 2000 produces a healthy dose of **skepticism** about the American economy's growth prospects, it will probably be an excellent buying opportunity.

Selected Countries – Utilization of Information and Communications Technology, 1998

	Average Rank	Computers per 1000 Population (1998)	Telephone Lines per 1000 Population (1998)	Cell Phone Subscribers per 1000 Pop. (1998)	New Information Technology Meets Business Requirement (Index based on Survey)	Internet Connections per 1000 Pop. Based on Computers Accessing the Net
Sweden	1.6	444	696	511	8.5	35
United States	2.2	499	677	241	7.9	87.2
United Kingdom	3.4	323	549	220	9	22.6
Germany	5.4	268	566	170	7.5	14.9
France	5.4	273	583	190	6.9	7.8
Japan	5.8	272	493	316	5.9	11
Ireland	6	303	449	81	7.5	12.6
Italy	7	194	456	353	5.1	5.7
Spain	8	152	417	179	6.8	6.2

Source: Computer Industry Almanac Inc. Matrix Information and Directory Services, Inc. International Data Corporation and International Institute of Management Development.

THE 1999 INFORMATION SOCIETY INDEX
Measuring social, information, computer, and internet infrastructures

1999 ISI Ranking	Social Score (rank)	Information Score (rank)	Computer Score (rank)	Internet Score (rank)	Overall Score
United States	880 (14)	1,641 (1)	1,357 (2)	360 (3)	4,238
Sweden	1,027 (2)	1,435 (5)	1,287 (3)	335 (5)	4,084
Finland	1,015 (3)	1,445 (4)	972 (9)	308 (6)	3,740
Singapore	585 (34)	1,243 (10)	1,508 (1)	392 (1)	3,728
Norway	1,085 (1)	1,307 (8)	1,017 (5)	273 (7)	3,682
Denmark	915 (9)	1,311 (6)	1,23 (4)	218 (9)	3,621
Netherlands	980 (5)	1,311 (6)	1,023 (4)	218 (9)	3,532
Australia	1,015 (4)	1,077 (15)	1,016 (6)	384 (2)	3,492
Japan	952 (8)	1,582 (2)	795 (13)	146 (14)	3,475
Canada	893 (11)	1,311 (7)	970 (10)	189 (13)	3,363
Switzerland	878 (15)	1,254 (9)	987 (8)	214 (10)	3,333
Hong Kong	955 (7)	1,189 (12)	697 (19)	204 (11)	3,045
New Zealand	892 (12)	903 (24)	903 (12)	346 (4)	3,044
United Kingdom	888 (13)	995 (18)	943 (11)	203 (120)	3,029
Belgium	962 (6)	1,131 (14)	744 (14)	123 (16)	2,960
Germany	844 (18)	1,183 (13)	713 (18)	143 (15)	2,883
Israel	740 (23)	1,240 (11)	738 (15)	119 (17)	2,837
Austria	863 (17)	965 (20)	733 (16)	118 (18)	2,679
France	813 (19)	959 (21)	718 (17)	70 (21)	2,560
Korea	913 (10)	1,012 (17)	559 (21)	66 (23)	2,550
Taiwan	867 (16)	1,071 (16)	500 (23)	88 (20)	2,526
Ireland	785 (20)	948 (22)	646 (20)	106 (19)	2,485
Italy	685 (28)	948 (23)	549 (22)	69 (22)	2,251
Spain	784 (21)	970 (19)	386 (24)	66 (24)	2,206

Source: *The Fraser Opinion Letter* February 10, 1999

VENTURE CAPITAL COMPARISONS

	1995		1996		1997		1998		1999 (First Half)	
	United States	Europe	United States	Europe	United States	Europe	United States	Europe	United States	Europe
TOTAL	6,216.30	2,737	8,018.30	3,298	11,482.10	4,270	14,266.10	6,240	12,630.00	NA
IT	3,314.20	942	5,079.50	965	6,641.20	1,714	7,769.50	3,135	8,412.00	NA
Internet	814.00	NA	2,408.00	NA	3,291.00	NA	5,744.00	NA	6,313.00	NA

Note: Because of the differences in the definition of what constitutes venture capital in Europe and the U.S., we have endeavored to make the comparison a fair one by subtracting replacement capital and buyout data from the European figures. This was not however possible in the European IT figures.

Source: World Link November/December 1999.